



-  Tribal Lands
-  Drainage Boundary



Area of Interest



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ASP - Geographic Data Services  
ISR 43965 - Nov 23, 2018

## Upper Milk River Drainage

### **Physical Description**

The upper Milk River flows approximately 105 miles through Alberta before reentering Montana in Hill County, approximately 34 miles upstream of the Fresno Reservoir headwaters. This section of the Milk River consists of badlands, native grasses, sagebrush, and shrub/forest landscapes located primarily on private and federal lands. The upper Milk area encompasses approximately 2,100 square miles. Sage Creek is one of two major tributaries to the Milk River, flowing from the headwaters near the Sweetgrass Hills and coursing through Liberty and Hill counties approximately 60 miles southeast to the junction with Big Sandy Creek. Stream-side vegetation consists mainly of native grasses, rose, and sagebrush. Surrounding lands are privately owned pasture and cultivated croplands. Big Sandy Creek begins in the Bear Paw Mountains and flows approximately 52 miles northeast through Choteau and Hill counties to its confluence with the Milk River downstream of Fresno Reservoir. Surrounding lands consist of timbered mountains, prairie pastures, and cultivated croplands located on private lands and the Rocky Boy Indian Reservation.

There are numerous reservoirs constructed on ephemeral streams located throughout this area. Most of these reservoirs are too shallow for fisheries and are primarily used for stock water and irrigation. The largest reservoirs are Fresno and Bailey, both of which receive high fishing pressure and other recreational use. Fresno is managed as an irrigation storage facility by the Bureau of Reclamation (BOR) and experiences considerable annual water level drawdowns.

### **Fisheries Management**

Fresno Reservoir and the Milk River upstream of Fresno Dam support several fish species including, walleye, yellow perch, lake whitefish, northern pike, black crappie, burbot, sauger, rainbow trout, stonecat, white sucker, longnose sucker, emerald shiner, spottail shiner, Rocky Mountain sculpin, fathead minnow, brook stickleback, lake chub, northern redbelly dace, longnose dace, western silvery minnow, and plains minnow. Many of these species are also found in Sage and Big Sandy creeks. Species such as black bullhead, bluegill, smallmouth bass, largemouth bass, Iowa darter, and brassy minnow are found in the smaller impoundments and tributaries. Brook trout are found in the headwaters of Big Sandy and Sage Creek.

Fresno Reservoir, a 5,100-acre reservoir in north central Montana has been a popular fishery since impoundment in 1939. This mainstem reservoir on the Milk River supported 11,155 angler days in 2019 and ranked as the 5<sup>th</sup> most heavily fished waterbody in FWP Region 6 and 63<sup>rd</sup> most fished waterbody in Montana.

The Fresno fishery has been managed primarily for walleye since 1957 when walleye were first stocked. Since 2003, hatchery reared walleye had been stocked in the reservoir with little regard for forage and other sport fish. In 2012, an evaluation was completed by FWP that indicated wild walleye reproduction and recruitment was significant. Declining proportional stock densities (PSD) following record high relative abundance in gillnets (2010) suggested that cessation of walleye stocking and relying on wild walleye reproduction would lower relative abundance and potentially improve PSD. A concurrent goal of this management action was to reduce predation on the limited forage base. The management goal

under this no-stocking strategy was: Maintain a balanced fish community that promotes walleye growth, age and size structure while ensuring a sustainable forage base.

Under this strategy, walleye relative abundance decreased from an average 24/net (2006 to 2013) to 17/net (2014 to 2020). Relative weight of walleye continued to decline until 2017 (82.5) when it started to increase. PSDs continued to decline after 2011 reaching a record low of 24 in 2015. This metric increased to 61 in 2017 and declined to 38 in 2020.

In 2020, a petition was circulated in the Havre area requesting that FWP stock fish in Fresno Reservoir. This resulted in a public meeting on April 12, 2020, where over 60 interested individuals were in attendance. The outcome of this meeting was the impetus for FWP to initiate a fisheries management plan process for Fresno Reservoir that relied heavily on public involvement to guide management decisions.

Based on this public interest, FWP convened an advisory committee, completed a public survey, and developed alternatives to incorporate into a 10-year [Fresno Reservoir Fisheries Management Plan](#). The management goal under this plan is: The Fresno Reservoir fisheries will be managed as a walleye fishery with the primary goal of high angler catch rates for stock (10- to 15-inch) and quality (15- to 20-inch) walleye. This will be accomplished by stocking hatchery walleye to augment the wild walleye population. An emphasis will be placed on habitat enhancement efforts to support other species of interest (yellow perch, black crappie, and forage species).

Smaller reservoirs located throughout the area are managed for warm and cool water species. Trapping and transport of warmwater species such as yellow perch, bluegill, black crappie, and fathead minnows will continue to establish new fisheries, promote kids fishing, establish forage fish populations, or supplement existing gamefish populations. Hatchery-reared rainbow trout, brook trout, and largemouth bass will continue to be stocked into those ponds with sufficient water depth and good overwinter survival. Ponds and reservoirs will be restocked immediately following severe drought events or winterkills if favorable habitat conditions exist. Windmill aeration systems will be maintained on those ponds with marginal depths and low winter dissolved oxygen levels.

The Milk River above Fresno Reservoir has little information identifying species composition, densities, specific interactions, and habitat use of native and non-native fishes. A collaborative effort between FWP and Alberta Sustainable Resource Development evaluated sauger genetics in the upper Milk River. The study determined this population is genetically unaltered and not hybridizing with walleye located downstream in Fresno Reservoir. Development and implementation of a standardized sampling program in the upper Milk River targeting multiple habitats is currently being developed for long-term monitoring of the fish community.

Throughout the upper Milk River drainage, angling opportunities occur year-round, with anglers targeting the rivers and streams during the spring, shifting to the ponds and reservoirs from late spring through the winter months. Shore, boat, and ice fishing opportunities exist throughout the area, with anglers using a variety of methods to catch multiple species. Use of live baitfish is restricted in the drainage, with no live bait fish allowed on Fresno Reservoir and the Milk River above Fresno Reservoir.

## **Habitat**

Flows on the upper Milk River are highly variable and can range from intermittent pools (no flow) to flows exceeding 5,000 cfs depending on the time of year and precipitation. Flows are augmented annually through the transbasin diversion from the St. Mary River and canal system with up to 650 cfs during the irrigation season (April-September). Fresno Reservoir is a mainstem irrigation storage facility located on the Milk River with annual water fluctuations of more than 21 feet. Extreme reservoir drawdowns have negative impacts to the fishery and can result in poor spawning conditions, poor rearing habitat, poor overwinter water conditions, and increased fish entrainment downstream. Boat access can be challenging during low water years.

Efforts are underway to identify fish passage opportunities in the upper Milk drainage. Habitat evaluations are planned with the goal of identifying opportunities for passage and general habitat enhancement. Longstanding partnership with conservation districts will continue with mutual goals of implementing best management practices for streambank and stream crossing projects while opposing land use activities that degrade habitat and water quality.

FWP will continue to work with land management agencies and private landowners to improve riparian and aquatic health using a variety of treatment options. This can involve rotational grazing programs, riparian fencing, off-site water development and other methods that allow riparian plant communities to reach full potential.

## **Special Management Issues**

### ***Milk River and Fresno Reservoir Water Management***

The Milk River Project ensures the Milk River and downstream water users have a reliable source of water and flow. Prior to the St. Mary's Diversion, the Milk River would become intermittent pools and dry out in 6 of 10 years. The infrastructure is well over 100 years old, and the reliability of the system has diminished. Furthermore, overall storage capacity in Fresno Reservoir has decreased by over 30% due to sedimentation. The project is vulnerable to short and long-term drought conditions.

The St. Mary canal and existing infrastructure has exceeded 100 years in age and federal funding has been earmarked to start rehabilitating this infrastructure. The St. Mary's Working Group is working on a plan to update and repair the existing infrastructure to ensure that St Mary River water continues to be diverted into the Milk River for irrigation. BOR has finished a recent trans-basin study and identified future climate change and highly variable water supplies being the biggest factors limiting all users in the next 40 years. FWP will remain engaged with the St. Mary's Working Group and local irrigation districts to identify opportunities to address aquatic resource conservation in the basin.

The fishery in Fresno Reservoir has varied over time due to high fluctuations in reservoir water elevations. On average, water levels in Fresno fluctuate 10- to 20-feet per year with an annual water retention rate of 117 ( $\pm 40$ ) days (storage capacity (acre-feet)/average annual inflows (acre-feet)). The timing of this fluctuation greatly influences the reproductive success, vulnerability to predation, and overall survival of forage and sport fish. Low water retention rates increase the rate in which nutrients are flushed, hindering the overall productivity to the fish community in Fresno Reservoir. The fluctuating water levels help keep littoral rock and gravel (walleye spawning substrates) clean, which benefits

natural reproduction. However, the fluctuating water levels restrict the growth of aquatic vegetation and reduces the inundation time when establishment occurs. This is important rearing habitat for young game and forage fishes, when available.

Fresno Reservoir Water Management Recommendations\*: To minimize the operational impacts on the fisheries resources of Fresno Reservoir and provide for a more stable and balanced fishery, the following operational statements are intended to minimize impacts if operational flexibility exists. Additionally, these guidelines remain cognizant of Fresno Reservoir Allocations; specifically, the Active Conservation Pool (2567.0 feet) that recognizes fish, wildlife, and recreation as components of this water allocation.

Yellow perch, black crappie are critical forage and highly prized sport fish and spottail shiners are an important forage fish that is vital to walleye growth and survival. Populations of these species are tightly correlated with reservoir operations.

- The most favorable spawning conditions for yellow perch occur when pool elevations are greater than 2565.0 during April and May. Maximum production occurs when reservoir levels are stable or increasing during these months.
- Black crappie and spottail shiner spawning conditions are maximized when pool elevations are greater than 2570.0 during May and June.
- Average winter (October to March) pool elevation from 1941 to 2011 was 2559.5- or 16-feet below full pool. At this drawdown level limited shoreline structure is submerged.
- Overwinter pool elevations of 2561.5- to 2562.5-feet (which represents only a 2- to 3-foot increase) would add 156- to 249-surface acres or 4,555- to 6,955-acre-feet and submerge critical rock/cobble substrate for young-of-year fish to seek refuge from predators.
- Pool elevations below 2555.0 have been shown to be extremely detrimental to the entire fish community of Fresno Reservoir.

FWP recognizes the complexities and importance of Milk River water to the many users of the system. Additionally, FWP strongly supports agricultural production on the Hi-Line and the critical link to reliable, cost-effective Milk River water. FWP supports the restoration of the Milk/St. Mary system.

\*Submitted to Bureau of Reclamation in March 2011

### ***Dace Conservation***

A recent study found the distribution and density of northern pearl dace, northern redbelly dace, and northern redbelly dace × finescale dace hybrids have declined. Pearl dace are present in several streams on the Middle Milk and declines were attributed to habitat alterations and predation by northern pike, which have expanded their distribution. Conservation and management strategies include: 1) Identify threats to known pearl dace populations (principally northern pike populations), 2) Expand sampling effort to identify additional dace populations within their historic range, 3) Identify strategies to conserve current pearl dace populations (barrier construction, northern pike suppression and future northern pike stocking strategies near known pearl dace populations), 4) Long-term monitoring program to assess population trends, and 5) Identify habitat enhancement opportunities (water leases/conservation and stream restoration). FWP will continue to identify areas to implement these strategies for dace conservation.

## FISHERIES MANAGEMENT DIRECTION FOR UPPER MILK RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Milk River - Canadian border to Fresno Reservoir headwaters	34 miles	Walleye, Northern pike	Wild	General	Develop and implement a standardized sampling program.
		Sauger (N), Burbot (N)	Wild	General/Conservation	Develop and implement a standardized sampling program.
		Native nongame fish (N)	Wild	Conservation	Develop and implement a standardized sampling program.
Habitat needs and activities: Improve habitat to support ecosystem function and production of all species.					
Fresno Reservoir	5,700 acres	Walleye	Wild/ Hatchery	General	Continue to place the primary management emphasis on walleye. Adhere to stocking and management guidelines of the <a href="#">Fresno Reservoir Fisheries Management Plan</a> .
		Northern pike, Black crappie, Lake whitefish	Wild	General	Continue to monitor populations. Rely on variable natural reproduction and survival to determine population levels.
		Yellow perch	Wild	General	Continue to monitor populations. Rely on variable natural reproduction and survival to determine population levels. Implement reservoir habitat enhancement projects as funding and time allows.
		Sauger (N), Burbot (N)	Wild	General/Conservation	Continue to monitor populations.
Habitat needs and activities: Work with BOR and water users to optimize water management in Fresno Reservoir to benefit fisheries. Optimal water management should target steady to rising reservoir water levels during critical spawning periods (mid-April to mid-June). It should also target favorable					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
overwinter pool elevations that submerge rock substrates and increase young-of-year rearing habitat. Implement habitat enhancement projects such as tree reefs to increase spawning and rearing habitat.					
Big Sandy Creek	52 miles	Walleye, Northern pike, Yellow perch, Black bullhead	Wild	General	Monitor if time and resources are available to quantify and qualify fish assemblage.
		Native non-game fish (N)	Wild	Conservation	Protect habitat and provide passage where applicable.
Habitat needs and activities: Identify habitat issues and work closely with local conservation districts, county road crews, and landowners to implement hydraulically evaluated water crossings which emphasis fish passage and aquatic connectivity.					
Sage Creek	60 miles	Northern pike, Yellow perch	Wild	General	Monitor if time and resources are available to quantify and qualify fish assemblage.
		Native non-game fish	Wild	Conservation	Protect habitat and provide passage where applicable.
Habitat needs and activities: Identify habitat issues and work closely with local conservation districts, county road crews, and landowners to implement hydraulically evaluated water crossings which emphasis fish passage and aquatic connectivity.					
Bailey Reservoir	70 acres	Northern pike, Bluegill, Yellow perch, Black crappie	Wild	General	Seek opportunities to improve reservoir fishery using natural and artificial habitat structures.
Habitat needs and activities: Increase reservoir habitat using natural and artificial structures.					